"Material contained herein is made available for the purpose of peer review and discussion and does not necessary reflect the views of the DoN or DoD."

## 2000

- Spyropoulou, Evdoxia, Levin, Timothy, and Irvine, Cynthia, Calculating Costs for Quality of Security Service, to appear in Proceeding of the 15th Computer Security Applications Conference, New Orleans, LA, December 2000.
- Steven Balmer and Cynthia Irvine, **Analysis of Terminal Server Architectures for Thin Clinents in a High Assurance Network**, to appear in *Proceedings of the 23rd National Information Systems Security Conference*, Baltimore, MD, October 2000.
- Cynthia Irvine and Timothy Levin, **Quality of Security Service**, to appear in *Proceedings of the New Security Paradigms Workshop*, Cork, Ireland, September 2000.
- Robin, John Scott and Irvine, Cynthia, **Analysis of the Intel Pentium's Ability to Support a Secure Virtual Machine Monitor,** *Proceedings of the 9th USENIX Security Symposium*, Denver, CO, August 2000, pp. 129--144.
- Cynthia E. Irvine, Trust Relationships, to appear in Encyclopedia of Distributed Computing, Kluwer Academic Publishers.
- Cynthia E. Irvine, **Security: Where Testing Fails**, *ITEA Journal*, June/July 2000.
- Irvine, Cynthia and Levin, Timothy, **Toward Quality of Security Service in A Resource**Management System Benefit Function, *Proceedings of the 2000 Heterogeneous Computing Workshop*, May 2000, pp. 133--139.
- Cynthia Irvine and Timothy Levin, **The Effects of Security Choices and Limits in a Metacomputing Environment**, NPS Technical Report NPS-CS-00-004, April 2000.
- Cynthia Irvine and Timothy Levin, An Introduction to Quality of Security Service, NPS Technical Report NPS-CS-00-005, April 2000.
- Cynthia Irvine, Howard J. Seigel, Viktor Prasanna, Debra Hensgen, Timothy Levin, Management System for Heterogeneous Networks Final Report, Volume I: Project Summary and Papers, NPS Technical Report NPS-CS-00-006, April 2000.
- Evie Spyropoulou, Timothy Levin, and Cynthia Irvine, Quality of Security Service Costing Demonstration for the MSHN Project, NPS Technical Report NPS-CS-00-007, April 2000.
- Kim, Jong-Kook, Hensgen, D.A., Kidd, T., Siegel, H.J., St. John, D., Irvine, C.E., Levin, T.,
  Porter, N.W., Prasanna, V.K., and Freund, R.F., A QoS Performance Measure Framework for
  Distributed Heterogeneous NetworksProceeding of 8th Euromicro Workshop on Parallel and
  Distributed Processing, Rhodos, Greece, January 2000, pp 18--27.
- Irvine, C.E., Security Issues for Automated Information Systems, Handbook of Public Information Systems, ed. G. D. Garson, Marcel Dekker, Inc., New York, NY, pp 231--245.

# 1999

• Irvine, Cynthia and Levin, Timothy, A Toward a Taxonomy and Costing Method for Security Services Proceeding of the 15th Computer Security Applications Conference, Phoenix, AZ, December 1999.

- Levin, Timothy, and Irvine, Cynthia, Quality of Security Service in a Resource Management System Benefit Function, Naval Postgraduate School Technical Report, NPS-CS-99-002, Monterey, CA, November 1999.
- Irvine, C.E., The Reference Monitor Concept as a Unifying Principle in Computer Security Education, Proceeding IFIP TC11 WC 11.8 First World Conference on Information Security Education, Kista, Sweden, June 1999, pp 27-37.
- Irvine, C.E., **Amplifying Security Education in the Laboratory**, Invited talk in the *Proceeding IFIP TC11 WC 11.8 First World Conference on Information Security Education*, Kista, Sweden, June 1999, pp 139--146.
- Irvine, C.E. and Levin, T., A Note on Mapping User-Oriented Security Policies to Complex Mechanisms and Services, Naval Postgraduate School Technical Report, NPS-CS-99-008, Monterey, CA, 15 June 1999.
- Irvine, C.E. and Levin, T., **Toward a Taxonomy and Costing Method for Security Services,** Naval Postgraduate School Technical Report, NPS-CS-99-007, Monterey, CA, 15 June 1999.
- Levin, T., and Irvine, C.E., An Approach to Characterizing Resource Usage and User Preferences in Benefit Functions, Naval Postgraduate School Technical Report, NPS-CS-99-005, Monterey, CA, 15 June 1999.
- Irvine, C.E., **The Benefits of Student Research in Information Systems Security Education**, Talk and paper at the *National Colloquium on Information Systems Security Education*, Palisades, NY, May 1999.
- Isa, H.R., Shockley, W. R., and Irvine, C.E., A Multi-threading Architecture for Multilevel Secure Transaction Processing Proceeding of 1999 Symposium on Security and Privacy, Oakland, CA, May 1999, pp 166--179.
- Hensgen, D., Kidd, T., St. John, D., Schnaidt, M.C., Siegel, H. J., Braun, T., Maheswaran, M., Ali, S., Kim, J-K, C. E., Levin, T., Freund, R.F., Kusso, M., Godfrey, M., Duman, A., Carff, P., Kidd, S., Prasanna, V., Bhat, P, Alhusaini, A., An Overview of the Management System for Heterogeneous Networks (MSHN), Proceedings of the 8th Workshop on Heterogeneous Computing Systems (HCW '99), San Juan, Puerto Rico, pp. 184-198, April 1999.

# 1998

- Irvine, C.E., Chin, S-K., and Frincke, D., **Integrating Security into the Curriculum**, *IEEE Computer*, pp. 25--30, December 1998.
- Wright, R.E., Shifflett, D.J., and Irvine, C. E., Security for a Virtual Heterogeneous Machine *Proceedings of the Fourteenth Computer Security Applications Conference*, Scottsdale, AZ, pp. 167--177, December 1998.
- Irvine, C.E., Anderson, J.P., Robb, D.A., and Hackerson, J., High Assurance Multilevel Services
  for Off-The-Shelf Workstation Applications, Proceedings of the Proceedings of the National
  Information Systems Security Conference, Crystal City, VA, pp. 421--431, October 1998.
- Irvine, C.E. and Shockley, W.R., Roundhouse: A Security Architecture for Active Networks, Naval Postgraduate School Technical Report, NPSCS-98-002, Naval Postgradute School, Monterey, CA, May 1998.

- Chin, S-K, Irvine, C.E., and Frinke, D., An Information Security Education Initiative for Engineering and Computer Science Naval Postgraduate School Technical Report, NPSCS-97-003, Naval Postgraduate School, Monterey, CA, December 1997.
- Irvine, C.E., Naval Postgraduate School Center for INFOSEC Studies and Research: Teaching the Science of Computer Security, MILCOM Proceedings, Monterey, CA, Vol 1. pp 405--409. November 1997.
- Irvine, C.E., Challenges in Computer Security Education, *IEEE Software*, Vol. 14, No. 5, 1997, pp 110-111.
- Irvine, C.E., Warren, D. F., and Stemp, R., **The NPS CISR Graduate Program in INFOSEC Education: Six Years of Experience**, *Proceedings of the 20th National Information Systems Security Conference*, Baltimore, MD, October 1997, pp 22--30.
- Irvine, C.E., **Security in Innovative New Operating Systems**, *Proceedings IEEE Symposium on Security and Privacy*, May 1997, pp. 202-203.
- Irvine, C.E., Warren, D. F., and Stemp, R., **Teaching Introductory Computer Security at a Department of Defense University** NPS-CS-97-002, April 1997.
- Irvine, C.E., The First ACM Workshop on Education Computer Security, ACM SIGSAC Review, Vol 15, No. 2, pp 3-5, 1997.
- Volpano, D. and Irvine, C.E., **Secure Flow Typing**, *Computers and Security*, Vol 16, No.2, 1997, pp 137-144.

### 1996

- Currie, D.L., and Irvine, C.E., **Surmounting the Effects of Lossy Compression on Steganography**, *Proceedings of the 19th National Information System Security Conference*, Baltimore, Md, October 1996, pp. 194-201.
- Volpano, D, Smith, G., and Irvine, C.E., A Sound Type System for Secure Flow Analysis, *Journal of Computer Security*, Vol. 4, No. 3, 1996, pp. 1-21.
- Irvine, C.E., Goals for Computer Security Education, Proceedings of the IEEE Symposium on Security and Privacy, May 1996, pp. 24-25.

## 1995

- Irvine, C.E., Report on the Defensive Information Warfare Symposium, 11-12 December 1995, New Orleans, LA. Electronic Cipher #3, Dec. 23, 1995, IEEE Computer Society TC on Security and Privacy.
   URL http://www.itd.nrl.navy.mil/ITD/5540/ieee/cipher/
- Irvine, C.E., and Volpano, D., A Practical Tool for Developing Trusted Applications, in *Proceedings Eleventh Annual Computer Security Applications Conference*, New Orleans, LA, pp. 190-195, December 1995.
- Irvine, C.E., A Multilevel File System for High Assurance, Proceedings of the IEEE Symposium on Security and Privacy, Oakland, May 1995, pp. 78-87.

• Irvine, C.E., **Report on Tenth Annual Computer Security Applications Conference**, Electronic Cipher #3, Jan. 13, 1995, IEEE Computer Society TC on Security and Privacy. URL http://www.itd.nrl.navy.mil/ITD/5540/ieee/cipher/cipher-archive.html

## Earlier Work

- Schell, R.R., and Irvine, C.E., **Future Roles for Balanced Assurance in Trusted Database Management Systems**, in Proceedings 5th RADC Database Security Workshop, October 1992.
- Irvine, C.E., Schell, R.R. and Thompson, M.F, Using TNI Concepts for the Near Term Use of High Assurance Database Management Systems, *Proceedings of the Fourth RADC Database Security Workshop*, Little Compton, RI, April 1991.
- Vetter, L.L., Schell, R.R. and Irvine, C.E., Architecture for an Embedded Secure Data Base Management System, in Proceedings, Sixth Annual Computer Security Applications Conference, December 1990.
- Schell, R.R, and Irvine, C.E., **Performance Implications for Multilevel Database Systems**, *in Proceedings 3rd RADC Database Security Workshop*, June 1990.
- Irvine, C.E., Acheson, T.B. and Thompson, M.F., **Building Trust into a Multilevel File System**, *Proceedings of the 13th National Computer Security Conference*, Washington, DC, 1990, pp. 450-459.
- Irvine, C.E. and Towle, B., **Embedded Secure Database Management System**, Rome Air Development Center, RADC-TR-90-439, December, 1990.
- Irvine, C. E., and Acheson, T.B., Factors Affecting Software Ports to the GEMSOS Environment, Technical Note, GCI-89-03-01, July 1989.
- Levin, T. and Padilla, S. and Irvine, C., A Formal Model for UNIX SETUID, *Proceedings of the 1989 IEEE Symposium on Security and Privacy*, Oakland, 1989, pp.73-83.
- Irvine, C.E. and Levin, T., An Analysis for Class A1 Certification of the Multilevel Secure UNIX Workstation, Technical Report GCI-89-06-01, 1989.
- Irvine, C.E., Thompson, M.F., Schell, R.R., Tao, T.F., Lessin, R.E., Wopat, J.R., and Ben-Arieh, E., Genesis of a Secure Application: A Multilevel Secure Message Preparation Workstation Demonstration, Proceedings of the 4th Aerospace Security Applications Conference, Orlando, FL, December 1988, pp. 30-36.